

## ABSTRACT

A communication system is provided which permits of communication between an deployed implantable medical device (IMD) and a large-scale powerful computer capable of manipulating complex nonlinear modeling of physiologic systems, and also capable of accounting for large amounts of historical data from a particular patient or a cohort group for improved modeling and predictive power, which may be expected to lead to improved patient outcomes. A deployed IMD may be polled by a routing instrument external to the host patient, and data may be received by wireless communication. This data may be transmitted to a central large-scale or other relatively powerful computer for processing according to an appropriate model. A treatment or instruction regimen, as well as appropriate firmware or software upgrades, may then be transmitted to the routing instrument for immediate or eventual loading into the IMD via wireless communication.